CIS 122

Homework 1 Review
Homework Review

● Almost all homework received
  ○ If you are planning on submitting late, let me know!

● Feedback tonight
  ○ Homework grades

● Feedback soon
  ○ Homework solutions
def FtoC(Ftemp):
    """Converts temperature from Fahrenheit to Celsius"""
    Ctemp = (5.0/9.0) * (Ftemp - 32)
    return Ctemp

def CtoK(Ctemp):
    """Converts temperature from Celsius to Kelvin"""
    Ktemp = Ctemp + 273
    return Ktemp
def FtoK(Ftemp):
    """Converts temperature from Fahrenheit to Kelvin""
    Ctemp = (5.0/9.0) * (Ftemp - 32)
    Ktemp = Ctemp + 273
    return Ktemp

def FtoK(Ftemp):
    """Converts temperature from Fahrenheit to Kelvin""
    Ctemp = FtoC(Ftemp)
    Ktemp = CtoK(Ctemp)
    return Ktemp
def myMax(a,b):
    """Return the larger of a and b"""
    if a > b:
        return a
    else:
        return b
def myMax3(a,b,c):
    """Return the largest of a, b, and c"""
    if a > b:
        if a > c:
            return a
    elif b > a
        if b > c:
            return b
    else:
        return c
def myMax3(a, b, c):
    """Return the largest of a, b, and c"""
    if a > b and a > c:
        return a
    elif b > a and b > c:
        return b
    else:
        return c
def myMax3(a, b, c):
    """Return the largest of a, b, and c"""
    if a >= b and a >= c:
        return a
    elif b >= a and b >= c:
        return b
    else:
        return c
def myMax3(a,b,c):
    """Return the largest of a, b, and c"""
    if a >= b and a >= c:
        return a
    elif b >= a and b >= c:
        return b
    else:
        return c

def myMax3(a,b,c):
    """Return the largest of a, b, and c"""
    d = myMax(a,b)
e = myMax(c,d)
return e
def myMax3(a, b, c):
    """Return the largest of a, b, and c"""
    if a >= b and a >= c:
        return a
    elif b >= a and b >= c:
        return b
    else:
        return c

def myMax3(a, b, c):
    """Return the largest of a, b, and c"""
    return myMax(myMax(a, b), c)
• Shifting letters
  ○ Convert letter to number
  ○ Add shiftNum to number
  ○ Convert back to letter

```python
def shiftUpperChar(char, shiftNum):
    """Shifts char forward by shiftNum letters""
    charNum = ord(char)
    shiftedNum = charNum + shiftNum
    shiftedChar = chr(shiftedNum)
    return shiftedChar
```
Homework Review - Part 3

- Shifting letters
  - Convert letter to number
  - Add shiftNum to number
  - If we've gone too far, shift back
  - Convert back to letter

```python
def shiftUpperChar(char, shiftNum):
    """Shifts char forward by shiftNum letters"""
    charNum = ord(char)
    shiftedNum = charNum + shiftNum
    if shiftedNum > ord('Z'):
        shiftedNum = shiftedNum - 26
    shiftedChar = chr(shiftedNum)
    return shiftedChar
```
Homework Review - Part 3

- Shifting characters - 3 cases
  - Upper case letter - use shiftUpperCase
  - Lower case letter - use shiftLowerCase
  - Anything else - return original char

```python
def shiftChar(char, shiftNum):
    """Shifts char forward by shiftNum letters""
    if ord('a') <= ord(char) <= ord('z'):
        return shiftUpperCase(char)
    etc...
```
Homework Review - Part 3

- Shifting characters - 3 cases
  - Upper case letter - use shiftUpperCase
  - Lower case letter - use shiftLowerCase
  - Anything else - return original char

```python
def shiftChar(char, shiftNum):
    """Shifts char forward by shiftNum letters"""
    if 'a' <= char <= 'z':
        return shiftUpperCase(char)
    etc...
```
Ironing out Bugs

- We all write buggy code
  - Easy to fix if we know what they are
  - How do we catch them?

- Testing code
  - I give you some test cases
  - Run known input through functions
  - Check output

- My test cases don't catch everything
  - Run tests of your own
We can't check everything
  ○ That's a lot of input
  ○ Can we never be sure our code works?

Technically no...
  ○ But we can be pretty sure

Test smart
  ○ If one input works, similar inputs probably also work
  ○ Test different kinds of inputs
  ○ Try to cover all cases
Ironing out Bugs - myMax

● Three important cases
  ○ a > b
  ○ a < b
  ○ a == b

● Three test cases (at least)
  ○ myMax(1,2)
  ○ myMax(2,1)
  ○ myMax(3,3)
Ironing out Bugs - ShiftChar

- What cases should we test?
  - Come up with a test for each
Ironing Out Bugs

● Always check your edge cases

● If your function deals with numbers
  ○ Make sure it works for 0

● If your function deals with strings
  ○ Make sure it works on the empty string

● If your function works up to a specific bound
  ○ Check that bound
Ironing out Bugs

- I don't need to see your test cases
  - Don't need to print out results
  - Don't need to submit records

- If you've tested your code, it will be evident
  - Your code will work